

ORIGINAL ARTICLE

Frequency of Dental Caries in Undergraduate Dental Students

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ABSTRACT

Aim: To determine the frequency of dental caries in undergraduate dental students.**Study design:** Cross-sectional study**Place and duration of study:** Ayub Medical College, Abbottabad from 1st March 2022 to 31st August 2022.**Methodology:** One hundred and forty students of dental with ages 17-25 years were enrolled. Detailed demographics were recorded after informed written consent. More than 25 years age students and reluctant students were excluded. Procedure recommended by WHO was followed to document the oral health status for dental caries.**Results:** There were 63(45%) males and 77(55%) females. Maximum of the students 37(26.4%) and 36(25.7%) belong to the age group 19-21 and 21-23 respectively. Seventy nine (56.3%) were the residents of urban area while 23(16.42%), 39(27.85%), 32(22.85%) and 46(32.85%) students were taken from 1st, 2nd, 3rd and 4th year respectively. Out of all the pupils, 103(73.57%) had dental caries with a DMFT score (>0), whereas 37(26.43%) were healthy.**Conclusion:** Compared to men, women are more likely to progress dental caries. The average total DMFT score differential did not affect either party much. DMFT score and age cluster associations were very statistically significant. The average DMFT score for females across the different academic levels did not differ significantly. While other DMFT score elements were non-significant, the decaying factor of the average DMFT score dramatically reduced.**Keywords:** Dental Caries, DMFT Index, World Health Organization (WHO)

INTRODUCTION

Dental caries is an infectious and microbiological illness.¹ It is the outcome of tooth demineralization, which, if left untreated, may cause cavitation and in turn, pulp damage². The interaction with a number of issues, including weak teeth from superficial sources, dental plaque bacteria and refined carbohydrates, demineralization of the tooth³. A long-standing and common communicable illness, dental caries affects billions of individual globally⁴. The most common chronic disease affecting people is one whose severity worsens over time if neglected⁵.

Decomposed, missing, or damaged teeth significantly affect daily life since they impair eating, chewing, smiling, and communicating⁶. According to World Health Organization (WHO), dental caries is the third most common oral condition that affects people of all races⁷. In majority of countries across the world, especially in industrialized countries, dental caries affects about 100% of the adult population⁸⁻¹⁰. Dental caries are five times more prevalent than asthma and seven times more prevalent than hay fever in Pakistan, troubling outcomes for the country's oral health⁹. Due to poor dental hygiene habits, increased sugar intake, and a lack of knowledge about fluoride additives, it is currently a major issue for community health in emerging nations¹⁰⁻¹³. Therefore, it is not surprising that the WHO is calling for commitments for continuous improvement in oral and dental health¹⁴.

Since it has been in use for almost 80 years, the Decayed, Missing, Filled (DMF) index is widely acknowledged as the important indicator of caries experience in dental epidemiology¹². The index used for teeth is known as DMFT, and scores for each individual can range from 0 to 28 or 32. The DMF scoring scale will be used to interpret the DMFT scores¹⁵. There is disagreement over the characteristics that increase the likelihood of dental caries in women, and some of these characteristics may vary depending on the community¹⁶.

The goal of the current study is to assess the gender disparities in dentistry undergrad students' prevalence of dental caries. Therefore, it was crucial to evaluate the current dental caries complaint situation as well as awareness of oral health.

MATERIALS AND METHODS

This observational cross-sectional study conducted at Ayub Medical College from 1st March 2022 to 31st August 2022 after Ethical Committee of the institution. A sample of 140 dental students and age between 17-25 years were enrolled. Written agreement form was signed by contestant. The samples were educated that there are no drawbacks or jeopardizes. More than 25 years age students and reluctant students were excluded. Procedure recommended by WHO was followed to document the oral health status for dental caries. Students who satisfied the inclusion criteria were examined in the out-door patient and diagnosis dept. (OPD) of Dental section. Demographic and DMFT performa was filled by single examiner including examination for dental carries to rule out any errors. In DMFT index, (D) designates the decayed teeth, (M) missing teeth due to caries, (F) filling of carious teeth and while (T) teeth. The dental chair was made available for the kids to use. Each student's instruments were sterile individually. The date was entered and examined using the SPSS-25.0. Chi-square test was used to assess the connection between gender and the prevalence of dental caries. The average DMFT, dental caries or decayed, missing, and filling differences across several groups were examined using an independent t-test. The P-Value 0.05 cutoff was applied, and the 95% confidence level was employed.

RESULTS

Among the 140 subjects, 63(45%) were males and 77(55%) were females. Maximum of the students 37(26.4%) and 36(25.7%) belong to the age cluster 19-21 and 21-23 respectively (Table 1).

Table 1: Stratification of gender according age (n=140)

Age (years)	Male	Female	Total
<19	15 (23.8%)	19 (24.7%)	34 (24.2%)
19-21	19 (30.1%)	18 (23.3%)	37 (26.4%)
21-23	14 (22.2%)	22 (22.9%)	36 (25.7%)
23-25	15 (23.8%)	18 (23.35)	33 (23.5%)
Total	63 (100%)	77 (100%)	140 (100%)

Among the participants, 79(56.3%) were city dwellers. Students 23(16.42%), 39(27.85%), 32(22.85%) and 46(32.85%) came from the first, second, third, and fourth years, respectively. Out of all the pupils, 103(73.57%) had dental caries with a DMFT

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score (>0), whereas 37(26.43%) were healthy. In the 140 students who took the test, the DMFT Score with 0 was 37(26.43%) and the DMFT Score with 1 was 40(28.57%). The DMFT Score with 2 was 24(17.14), the DMFT Score with 3 was 27(19.28%), and the DMFT Score with 4 was 12(8.57%) (Table 2).

The relationship between gender and DMFT index score over time is provided. With a p-value of 0.002, the average number of decomposed students among male and female students and this association are statistically significant. Additionally, the average number of missing teeth was 0.000.00 and 0.0250.18 among students who were male and female, respectively, and was statistically significant with a p value of 0.045 in various graduating years (Table 3).

Table-2: Socio demographic characteristics of participants

Characteristics	No.	%	
Residence	Rural	79	56.3
	Urban	61	43.7
Current Class	1 st Year	23	16.42
	2 nd Year	39	27.85
	3 rd Year	32	22.85
	Final Year	46	32.85
Caries Status	DMFT=0	37	26.43
	DMFT >0	103	73.57
DMFT Index Score	0	37	26.43
	1	40	28.57
	2	24	17.14
	3	27	19.28
	4	12	8.57
Total	140	100	

Table 3: Graduate study years and the DMFT Index Score are related to gender

Gender	Current class	DMFT Index	Number of decayed	Number of missing	Number of filled
Male	1 st Year (10)	1.60±1.24	1.30±1.06	-	0.27±0.37
	2 nd Year (19)	1.62±1.21	1.25±0.81	-	0.25±0.40
	3 rd Year (12)	1.14±1.03	0.56±0.54	-	0.56±0.67
	Final Year (22)	1.9±1.30	0.90±0.76	-	0.90±0.60
	Total (63)	1.53±1.13	1.01±0.82	-	0.46±0.56
Female	1 st Year (13)	1.59±1.31	0.86±0.81	-	0.52±0.54
	2 nd Year (20)	1.32±1.09	0.59±0.67	-	0.63±0.48
	3 rd Year (20)	1.02±0.09	0.28±0.52	-	0.57±0.71
	Final Year (24)	0.9±0.30	0.24±0.45	-	0.90±0.74
	Total (77)	1.21±1.09	0.51±0.69	-	0.64±0.63
P-value		0.232	0.001*	-	0.27

*Significant

DISCUSSION

In the present study, students were divided into four groups, ages 19 to 25, 19 to 21, 21 to 23, and 23 to 25. Age and DMFT score had a strong statistically significant association (p 0.05). The findings of this study were consistent with another study had done on undergraduate dentistry students in Lahore with regard to age and gender.¹⁸ Other research using the same study design confirmed that female students had a greater caries frequency than male pupils^{17,18}. The association between DMFT score and area was not significant in the current study (p=0.24), however the author of another study published in 2021 claimed that caries was complicated in urban areas, which was the contrary of the findings of the present study¹⁸⁻²⁰.

This study showed that there was no statistically significant difference in the average total DMFT score for males and females. However, the number of dental caries, which is a contributing factor to the DMFT average, was statistically significant with a p-value of 0.001 as well as the number of missing teeth. The findings of the current study showed that both men and women have lower levels of dental caries. Similar findings came from several investigations that were carried out in Pakistan, India, United Kingdom and Saudi Arabia^{1,21-23}.

Caries was shown to be quite common and severe based on these results. Variations in reported rates of dental caries were found among the included studies. This is consistent with the findings of Richardson et al²⁴, who found that the prevalence of dental caries varies widely across studies due to factors such as (1) the subjects studied, their age, and the availability for examination; (2) racial and cultural factors; (3) socioeconomic status; and (4) diagnostic criteria. The prevalence of dental caries varies widely from one region to the next, making it impossible to generalise results from one ethnic group within that group²⁴.

CONCLUSION

Females are more likely to develop dental caries than males. The average total DMFT score differential did not affect either party much. DMFT score and age cluster associations were very statistically significant. The average DMFT score for females

across the different academic levels did not differ significantly. While other DMFT score elements were non-significant, the decaying factor of the average DMFT score dramatically reduced.

Conflict of interest: Nothing to declare

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